SAF-RC-238
Characterization of Surface Soils
At 100-K-64 & 100-K-111
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 9/26/13
INITIAL/DATE

COMMENTS:

SDG JP0635 SAF-RC-238

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Sample Location: 100-K-111 West Focused Samples

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

TestAmerica Inc

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Assigned Laboratory Code: TARL

Data Package Contains 62 *Pages*

Report No.: 57076

Results in this report relate only to the sample(s) analyzed.

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
JP0635	RC-238	J1RR31	J3I170408-1	M10LN1AG	9M10LN10	3260039
		J1RR31	J3I170408-1	M10LN1AC	9M10LN10	3260040
		J1RR31	J3I170408-1	M10LN1AH	9M10LN10	3260041
		J1RR31	J3I170408-1	M10LN1AF	9M10LN10	3260042
		J1RR31	J3I170408-1	M10LN1AD	9M10LN10	3260043
		J1RR31	J3I170408-1	M10LN1AE	9M10LN10	3260044
		J1RR31	J3I170408-1	M10LN1AA	9M10LN10	3260077

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

September 24, 2013

Attention: Joan Kessner

SAF Number	:	RC-238
Date SDG Closed	:	September 17, 2013
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	JP0635
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On September 17, 2013, one soil sample was received at TestAmerica for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1RR31	M10LN	SOIL	09/17/13

II. Sample Receipt

The sample was received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002
Gas Proportional Counting
Strontium-90 by method RL-GPC-010
Gamma Spectroscopy
Gamma Spec by method RL-GAM-001

Liquid Scintillation Counting
Tritium by method RL-LSC-005
Carbon-14 by method RL-LSC-008
Nickel-63 by method RL-LCS-017
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002:
The tracer yield for the sample duplicate (J1RR31) was not within the acceptance limits in the original count. The sample duplicate was recounted for an acceptable result. Except as noted; the LCS, batch blank, sample and sample duplicate (J1RR31) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-010:
The LCS, batch blank, sample and sample duplicate (J1RR31) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:
The CRDL for the sample duplicate (J1RR31) was not met for some of the analytes. Except as noted, the LCS, batch blank, sample and sample duplicate (J1RR31) results are within contractual requirements.

Liquid Scintillation Counting
Tritium by method RL-LSC-005:
The LCS, batch blank, sample and sample duplicate (J1RR31) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:
The LCS, batch blank, sample and sample duplicate (J1RR31) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:
The LCS, batch blank, sample and sample duplicate (J1RR31) results are within contractual requirements.

Chemical Analysis
Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, sample, sample duplicate (J1RR31) and sample matrix spike (J1RR31) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Rhonda Wagar
Project Manager

Drinking Water Method Cross References

	DRINKING WATER ASTM METHOD CROSS REFERENCES	
Referenced Method	**Isotope(s)**	**TestAmerica Richland's SOP No.**
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

Results in this report relate only to the sample(s) analyzed.

Uncertainty Estimation

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/?n), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, *u_c the combined uncertainty.* The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC|MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the **Work Order** Number.
RER	The equation Replicate Error Ratio = (S-D)/[sqrt($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 24-Sep-13

TestAmerica Inc TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 57076

SDG No: JP0635

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
3260041 C14_LSC									
J1RR31									
	M10LN1AH	C-14	1.26E-02 +- 2.2E-01	U	pCi/g	100%	4.73E-01	5.00E+01	
J1RR31 DUP									
	M10LN1AL	C-14	5.99E-03 +- 2.2E-01	U	pCi/g	100%	4.72E-01	5.00E+01	71.1
3260044 PUISO_PLATE_AEA									
J1RR31									
	M10LN1AE	Pu-238	-2.59E-03 +- 2.6E-02	U	pCi/g	100%	6.21E-02	1.00E+00	
		PU239/40	1.97E-02 +- 3.7E-02	U	pCi/g	100%	7.69E-02	1.00E+00	
J1RR31 DUP									
	M10LN2AP	Pu-238	-2.78E-03 +- 2.8E-02	U	pCi/g	99%	6.65E-02	1.00E+00	
		PU239/40	-6.66E-03 +- 2.8E-02	U	pCi/g	99%	8.23E-02	1.00E+00	
3260039 GAMMA_GS									
J1RR31									
	M10LN1AG	CO-60	-1.23E-02 +- 1.7E-02	U	pCi/g		2.89E-02	5.00E-02	
		CS-137	7.78E-02 +- 3.0E-02		pCi/g		2.66E-02	1.00E-01	
		EU-152	-3.64E-02 +- 3.3E-02	U	pCi/g		5.37E-02	1.00E-01	
		EU-154	-5.22E-03 +- 5.5E-02	U	pCi/g		9.42E-02	1.00E-01	
		EU-155	6.84E-02 +- 4.3E-02		pCi/g		4.58E-02	1.00E-01	
		K-40	1.76E+01 +- 2.1E+00		pCi/g		2.64E-01		
J1RR31 DUP									
	M10LN1AJ	CO-60	1.79E-02 +- 1.8E-02	U	pCi/g		3.35E-02	5.00E-02	1084.0
		CS-137	8.65E-02 +- 2.9E-02		pCi/g		2.92E-02	1.00E-01	10.7
		EU-152	-1.70E-02 +- 3.8E-02	U	pCi/g		6.37E-02	1.00E-01	-72.6
		EU-154	4.85E-02 +- 5.8E-02	U	pCi/g		1.06E-01	1.00E-01	248.3
		EU-155	6.79E-02 +- 3.6E-02	U	pCi/g		6.23E-02	1.00E-01	0.8
		K-40	1.76E+01 +- 2.1E+00		pCi/g		1.97E-01		0.5
3260040 SRTOT_SEP_PRECIP_GPC									
J1RR31									
	M10LN1AC	STRONTIUM	1.38E+00 +- 7.4E-01		pCi/g	64%	8.14E-01		
J1RR31 DUP									
	M10LN1AK	STRONTIUM	1.97E-01 +- 2.8E-01	U	pCi/g	81%	5.78E-01		150.0
3260042 906.0_H3_LSC									
J1RR31									
	M10LN1AF	H-3	-1.10E-02 +- 3.2E-02	U	pCi/g	100%	7.07E-02	4.00E+02	
J1RR31 DUP									
	M10LN1AM	H-3	-4.60E-03 +- 3.2E-02	U	pCi/g	100%	7.13E-02	4.00E+02	-82.0
3260043 NI63_LSC									
J1RR31									

TestAmerica Inc

rptSTLRchSaSummary2 V5.2.24 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

Sample Results Summary

Date: 24-Sep-13

TestAmerica Inc TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 57076

SDG No: JP0635

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
3260043 NI63_LSC									
J1RR31									
	M10LN1AD	Ni-63	2.33E+00 +- 4.0E+00	U	pCi/g	90%	6.61E+00	3.00E+01	
J1RR31 DUP									
	M10LN1AN	Ni-63	2.90E+00 +- 4.1E+00	U	pCi/g	90%	6.65E+00	3.00E+01	21.9
3260077 7196_CR6									
J1RR31									
	M10LN1AA	HEXCHROME	1.59E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	M10LN1AR	HEXCHROME	1.97E-01 +- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	21.3

No. of Results: 26

TestAmerica Inc

rptSTLRchSaSummary2 V5.2.24 A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

QC Results Summary

Date: 24-Sep-13

TestAmerica Inc TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 57076

SDG No.: JP0635

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
C14_LSC								
3260041 BLANK QC,								
M10L41AA	C-14	-3.12E-02 +- 2.2E-01	U	pCi/g	100%			4.71E-01
3260041 LCS,								
M10L41AC	C-14	7.58E+00 +- 6.2E-01		pCi/g	100%	103%	0.0	4.73E-01
PUISO_PLATE_AEA								
3260044 BLANK QC,								
M10L71AA	Pu-238	-1.65E-03 +- 2.7E-02	U	pCi/g	100%			5.92E-02
	PU239/40	-1.10E-03 +- 2.7E-02	U	pCi/g	100%			5.52E-02
3260044 LCS,								
M10L71AC	PU239/40	8.01E+00 +- 1.6E+00		pCi/g	100%	119%	0.2	6.73E-02
GAMMA_GS								
3260039 BLANK QC,								
M10L21AA	CO-60	3.09E-03 +- 9.3E-03	U	pCi/g				1.80E-02
	CS-137	-3.58E-03 +- 9.8E-03	U	pCi/g				1.70E-02
	EU-152	-1.44E-02 +- 2.3E-02	U	pCi/g				3.84E-02
	EU-154	1.24E-02 +- 2.9E-02	U	pCi/g				5.57E-02
	EU-155	1.04E-02 +- 1.8E-02	U	pCi/g				3.15E-02
	K-40	-5.69E-01 +- 2.8E-01	U	pCi/g				5.66E-01
3260039 LCS,								
M10L21AC	CS-137	1.01E+00 +- 1.3E-01		pCi/g		98%	0.0	2.54E-02
	RA-226	9.04E-01 +- 1.3E-01		pCi/g		79%	-0.2	3.63E-02
	RA-228	6.50E-01 +- 1.4E-01		pCi/g		93%	-0.1	7.11E-02
	U-238	9.64E-01 +- 1.2E-01		pCi/g		80%	-0.2	3.92E-02
SRTOT_SEP_PRECIP_GPC								
3260040 BLANK QC,								
M10L31AA	STRONTIUM	6.61E-02 +- 2.2E-01	U	pCi/g	83%			4.92E-01
3260040 LCS,								
M10L31AC	STRONTIUM	7.17E+00 +- 2.9E+00		pCi/g	85%	114%	0.1	5.59E-01
906.0_H3_LSC								
3260042 BLANK QC,								
M10L51AA	H-3	-2.85E-02 +- 4.5E-02	U	pCi/g	100%			1.02E-01
3260042 LCS,								
M10L51AC	H-3	5.04E-01 +- 7.9E-02		pCi/g	100%	77%	-0.2	1.21E-01
NI63_LSC								
3260043 BLANK QC,								
M10L61AA	Ni-63	1.92E+00 +- 3.9E+00	U	pCi/g	91%			6.54E+00
3260043 LCS,								
M10L61AC	Ni-63	2.67E+02 +- 1.3E+02		pCi/g	88%	88%	-0.1	6.76E+00
7196_CR6								
3260077 MATRIX SPIKE, J1RR31								
M10LN1AQ	HEXCHROME	2.63E+01 +- 0.0E+00		mg/kg	N/A	90%	-0.1	1.55E-01
3260077 LCS,								

TestAmerica Inc

rptSTLRchQcSummary V5.2.24 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

QC Results Summary

TestAmerica Inc TARL

Ordered by Method, Batch No, QC Type,.

Date: 24-Sep-13

Report No. : 57076

SDG No.: JP0635

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
M10TF1AC	HEXCHROME	1.86E+01 +- 0.0E+00		mg/kg	N/A	98%	0.0	1.55E-01
3260077 BLANK QC,								
M10TF1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01

No. of Results: 24

TestAmerica Inc

rptSTLRchQcSum mary V5.2.24 A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 24-Sep-13

Lab Name:	TestAmerica Inc	**SDG:**	JP0635	**Collection Date:**	9/12/2013 9:07:00 AM
Lot-Sample No.:	J3I170408-1	**Report No. :**	57076	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RR31	**COC No. :**	RC-238-004	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260039	GAMMA_GS			**Work Order:**	M10LN1AG		**Report DB ID:**	9M10LN10				
CO-60	**-1.23E-02**	U	1.7E-02	1.7E-02	2.89E-02	pCi/g		*-0.43*	9/20/13 08:00 a		321.8	GER18$1
							5.00E-02	*-(1.4)*			g	
CS-137	**7.78E-02**		3.0E-02	3.0E-02	2.66E-02	pCi/g		*(2.9)*	9/20/13 08:00 a		321.8	GER18$1
							1.00E-01	*(5.2)*			g	
EU-152	**-3.64E-02**	U	3.3E-02	3.3E-02	5.37E-02	pCi/g		*-0.68*	9/20/13 08:00 a		321.8	GER18$1
							1.00E-01	*-(2.2)*			g	
EU-154	**-5.22E-03**	U	5.5E-02	5.5E-02	9.42E-02	pCi/g		*-0.06*	9/20/13 08:00 a		321.8	GER18$1
							1.00E-01	*-0.19*			g	
EU-155	**6.84E-02**		4.3E-02	4.3E-02	4.58E-02	pCi/g		*(1.5)*	9/20/13 08:00 a		321.8	GER18$1
							1.00E-01	*(3.1)*			g	
K-40	**1.76E+01**		2.1E+00	2.1E+00	2.64E-01	pCi/g		*(66.5)*	9/20/13 08:00 a		321.8	GER18$1
								(16.9)			g	
Batch: 3260040	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M10LN1AC		**Report DB ID:**	9M10LN10				
STRONTIUM	**1.38E+00**		4.8E-01	7.4E-01	8.14E-01	pCi/g	64%	*(1.7)*	9/23/13 07:05 a		1.0	GPC31A
						3.80E-01		*(3.7)*			g	
Batch: 3260041	C14_LSC			**Work Order:**	M10LN1AH		**Report DB ID:**	9M10LN10				
C-14	**1.26E-02**	U	1.9E-01	2.2E-01	4.73E-01	pCi/g	100%	*0.03*	9/18/13 09:54 p		5.021	LSC9
						2.23E-01	5.00E+01	*0.11*			g	
Batch: 3260042	906.0_H3_LSC			**Work Order:**	M10LN1AF		**Report DB ID:**	9M10LN10				
H-3	**-1.10E-02**	U	2.8E-02	3.2E-02	7.07E-02	pCi/g	100%	*-0.16*	9/20/13 10:09 p		44.7	LSC4
						3.32E-02	4.00E+02	*-0.69*			g	

TestAmerica Inc
rptSTLRchSample
V5.2.24 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 24-Sep-13

Lab Name:	TestAmerica Inc	**SDG:**	JP0635	**Collection Date:**	9/12/2013 9:07:00 AM
Lot-Sample No.:	J3I170408-1	**Report No. :**	57076	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RR31	**COC No. :**	RC-238-004	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260043	NI63_LSC			**Work Order:**	M10LN1AD		**Report DB ID:**	9M10LN10				
Ni-63	**2.33E+00**	U	2.7E+00	4.0E+00	6.61E+00	pCi/g	90%	*0.35*	9/21/13 04:43 a		0.5	LSC8
						3.15E+00	3.00E+01	*(1.2)*			g	
Batch: 3260044	PUISO_PLATE_AEA			**Work Order:**	M10LN1AE		**Report DB ID:**	9M10LN10				
Pu-238	**-2.59E-03**	U	2.6E-02	2.6E-02	6.21E-02	pCi/g	100%	*-0.04*	9/20/13 11:07 a		1.06	ALP41
						1.35E-02	1.00E+00	*-0.2*			g	
PU239/40	**1.97E-02**	U	3.7E-02	3.7E-02	7.69E-02	pCi/g	100%	*0.26*	9/20/13 11:07 a		1.06	ALP41
						2.09E-02	1.00E+00	*(1.1)*			g	
Batch: 3260077	7196_CR6			**Work Order:**	M10LN1AA		**Report DB ID:**	9M10LN10				
HEXCHROME	**1.59E-01**			0.0E+00	1.55E-01	mg/kg	N/A	*(1.)*	9/23/13 10:05 a		2.5043	
							1.55E-01	*N/A*			g	

No. of Results: 13 **Comments:**

TestAmerica Inc
rptSTLRchSample
V5.2.24 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

Date: 24-Sep-13

DUPLICATE RESULTS

Lab Name:	**TestAmerica Inc**	**SDG:**	JP0635	**Collection Date:**	9/12/2013 9:07:00 AM
Lot-Sample No.:	**J3I170408-1**	**Report No. :**	57076	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	**J1RR31**	**COC No. :**	RC-238-004	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260077	7196_CR6			**Work Order:** M10LN1AR		**Report DB ID:** M10LN1ER			**Orig Sa DB ID:** 9M10LN10			
HEXCHROME	1.97E-01			0.0E+00	1.55E-01	mg/kg	N/A	(1.3)	9/23/13 10:05 a		2.5168	
	1.59E-01		**RPD**	**21.3**		1.55E-01		N/A			g	

No. of Results: 1 **Comments:**

TestAmerica Inc
rptSTLRchDupV5.2.24 A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

FORM II

Date: 24-Sep-13

DUPLICATE RESULTS

Lab Name:	**TestAmerica Inc**	**SDG:**	JP0635	**Collection Date:**	9/12/2013 9:07:00 AM
Lot-Sample No.:	**J3I170408-1**	**Report No. :**	57076	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	**J1RR31 DUP**	**COC No. :**	RC-238-004	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260039	GAMMA_GS			**Work Order:** M10LN1AJ		**Report DB ID:** M10LN1JR			**Orig Sa DB ID:** 9M10LN10			
CO-60	1.79E-02	U	1.8E-02	1.8E-02	3.35E-02	pCi/g		0.54	9/20/13 11:42 a		321.8	GER19$1
	-1.23E-02	U	**RPD**	**1084.0**		5.00E-02		(2.)			g	
CS-137	8.65E-02		2.9E-02	2.9E-02	2.92E-02	pCi/g		(3.)	9/20/13 11:42 a		321.8	GER19$1
	7.78E-02		**RPD**	**10.7**		1.00E-01		(5.9)			g	
EU-152	-1.70E-02	U	3.8E-02	3.8E-02	6.37E-02	pCi/g		-0.27	9/20/13 11:42 a		321.8	GER19$1
	-3.64E-02	U	**RPD**	**-72.6**		1.00E-01		-0.89			g	
EU-154	4.85E-02	U	5.8E-02	5.8E-02	1.06E-01	pCi/g		0.46	9/20/13 11:42 a		321.8	GER19$1
	-5.22E-03	U	**RPD**	**248.3**		1.00E-01		(1.7)			g	
EU-155	6.79E-02	U	3.6E-02	3.6E-02	6.23E-02	pCi/g		(1.1)	9/20/13 11:42 a		321.8	GER19$1
	6.84E-02		**RPD**	**0.8**		1.00E-01		(3.7)			g	
K-40	1.76E+01		2.1E+00	2.1E+00	1.97E-01	pCi/g		(89.6)	9/20/13 11:42 a		321.8	GER19$1
	1.76E+01		**RPD**	**0.5**				(16.9)			g	
Batch: 3260040	SRTOT_SEP_PRECIP_GPC			**Work Order:** M10LN1AK		**Report DB ID:** M10LN1KR			**Orig Sa DB ID:** 9M10LN10			
STRONTIUM	1.97E-01	U	2.7E-01	2.8E-01	5.78E-01	pCi/g	81%	0.34	9/23/13 07:05 a		1.0	GPC31B
	1.38E+00		**RPD**	**150.0**				(1.4)			g	
Batch: 3260041	C14_LSC			**Work Order:** M10LN1AL		**Report DB ID:** M10LN1LR			**Orig Sa DB ID:** 9M10LN10			
C-14	5.99E-03	U	1.9E-01	2.2E-01	4.72E-01	pCi/g	100%	0.01	9/18/13 10:16 p		5.047	LSC9
	1.26E-02	U	**RPD**	**71.1**		5.00E+01		0.06			g	
Batch: 3260042	906.0_H3_LSC			**Work Order:** M10LN1AM		**Report DB ID:** M10LN1MR			**Orig Sa DB ID:** 9M10LN10			

TestAmerica Inc
rptSTLRchDupV5.2.24 A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

Date: 24-Sep-13

DUPLICATE RESULTS

Lab Name:	TestAmerica Inc	**SDG:**	JP0635	**Collection Date:**	9/12/2013 9:07:00 AM
Lot-Sample No.:	J3I170408-1	**Report No. :**	57076	**Received Date:**	9/17/2013 9:25:00 AM
Client Sample ID:	J1RR31 DUP	**COC No. :**	RC-238-004	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
H-3	-4.60E-03	U	2.8E-02	3.2E-02	7.13E-02	pCi/g	100%	-0.06	9/20/13 10:52 p		44.9	LSC4
	-1.10E-02	U	**RPD**	**-82.0**		4.00E+02		-0.28			g	
Batch: 3260043	NI63_LSC			**Work Order:** M10LN1AN		**Report DB ID:** M10LN1NR			**Orig Sa DB ID:** 9M10LN10			
Ni-63	2.90E+00	U	2.8E+00	4.1E+00	6.65E+00	pCi/g	90%	0.44	9/21/13 05:04 a		0.5	LSC8
	2.33E+00	U	**RPD**	**21.9**		3.00E+01		(1.4)			g	
Batch: 3260044	PUISO_PLATE_AEA			**Work Order:** M10LN2AP		**Report DB ID:** M10LN2PR			**Orig Sa DB ID:**			
Pu-238	-2.78E-03	U	2.8E-02	2.8E-02	6.65E-02	pCi/g	99%	-0.04	9/23/13 10:59 a		1.0	ALP41
			RPD			1.00E+00		-0.2			g	
PU239/40	-6.66E-03	U	2.8E-02	2.8E-02	8.23E-02	pCi/g	99%	-0.08	9/23/13 10:59 a		1.0	ALP41
			RPD			1.00E+00		-0.48			g	

No. of Results: 12 **Comments:**

TestAmerica Inc
rptSTLRchDupV5.2.24 A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc

Matrix: SOIL

SDG: JP0635

Report No. : 57076

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3260077	7196_CR6			**Work Order:**	M10TF1AA		**Report DB ID:**	M10TF1AB				
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	9/23/13 10:05 a		2.5	
						1.55E-01		N/A			g	
Batch: 3260041	C14_LSC			**Work Order:**	M10L41AA		**Report DB ID:**	M10L41AB				
C-14	-3.12E-02	U	1.9E-01	2.2E-01	4.71E-01	pCi/g	100%	-0.07	9/18/13 10:38 p		5.052	LSC9
					2.21E-01	5.00E+01		-0.29			g	
Batch: 3260044	PUISO_PLATE_AEA			**Work Order:**	M10L71AA		**Report DB ID:**	M10L71AB				
Pu-238	-1.65E-03	U	2.7E-02	2.7E-02	5.92E-02	pCi/g	100%	-0.03	9/20/13 11:07 a		1.04	ALP43
					1.10E-02	1.00E+00		-0.12			g	
PU239/40	-1.10E-03	U	2.7E-02	2.7E-02	5.52E-02	pCi/g	100%	-0.02	9/20/13 11:07 a		1.04	ALP43
					9.02E-03	1.00E+00		-0.08			g	
Batch: 3260043	NI63_LSC			**Work Order:**	M10L61AA		**Report DB ID:**	M10L61AB				
Ni-63	1.92E+00	U	2.7E+00	3.9E+00	6.54E+00	pCi/g	91%	0.29	9/21/13 05:25 a		0.5	LSC8
					3.12E+00	3.00E+01		0.99			g	
Batch: 3260042	906.0_H3_LSC			**Work Order:**	M10L51AA		**Report DB ID:**	M10L51AB				
H-3	-2.85E-02	U	3.9E-02	4.5E-02	1.02E-01	pCi/g	100%	-0.28	9/20/13 11:35 p		49.4	LSC4
					4.80E-02	4.00E+02		-(1.3)			g	
Batch: 3260039	GAMMA_GS			**Work Order:**	M10L21AA		**Report DB ID:**	M10L21AB				
CO-60	3.09E-03	U	9.3E-03	9.3E-03	1.80E-02	pCi/g		0.17	9/20/13 08:01 a		348.0	GER19$1
						5.00E-02		0.67			g	
CS-137	-3.58E-03	U	9.8E-03	9.8E-03	1.70E-02	pCi/g		-0.21	9/20/13 08:01 a		348.0	GER19$1
						1.00E-01		-0.73			g	

TestAmerica Inc
rptSTLRchBlank
V5.2.24 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc

SDG: JP0635

Matrix: SOIL

Report No. : 57076

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
EU-152	-1.44E-02	U	2.3E-02	2.3E-02	3.84E-02	pCi/g		-0.37	9/20/13 08:01 a		348.0	GER19$1
						1.00E-01		-(1.2)			g	
EU-154	1.24E-02	U	2.9E-02	2.9E-02	5.57E-02	pCi/g		0.22	9/20/13 08:01 a		348.0	GER19$1
						1.00E-01		0.86			g	
EU-155	1.04E-02	U	1.8E-02	1.8E-02	3.15E-02	pCi/g		0.33	9/20/13 08:01 a		348.0	GER19$1
						1.00E-01		(1.1)			g	
K-40	-5.69E-01	U	2.8E-01	2.8E-01	5.66E-01	pCi/g		-(1.)	9/20/13 08:01 a		348.0	GER19$1
								-(4.1)			g	
Batch: 3260040	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M10L31AA		**Report DB ID:**	M10L31AB				
STRONTIUM	6.61E-02	U	2.1E-01	2.2E-01	4.92E-01	pCi/g	83%	0.13	9/23/13 07:05 a		1.2	GPC31D
					2.28E-01			0.61			g	

No. of Results: 13 **Comments:**

TestAmerica Inc
rptSTLRchBlank
V5.2.24 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc

SDG: JP0635

Matrix: SOIL

Report No. : 57076

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3260077	7196_CR6			**Work Order:**	M10TF1AC		**Report DB ID:**	M10TF1AS					
HEXCHROME	1.86E+01			0.0E+00	1.55E-01	mg/kg	N/A	1.90E+01		98%	9/23/13 10:05 a	2.5	
							Rec Limits:	80	120	0.0		g	
Batch: 3260041	C14_LSC			**Work Order:**	M10L41AC		**Report DB ID:**	M10L41CS					
C-14	7.58E+00		4.4E-01	6.2E-01	4.73E-01	pCi/g	100%	7.35E+00	1.5E-01	103%	9/18/13 11:00 p	5.02	LSC9
							Rec Limits:			0.0		g	
Batch: 3260044	PUISO_PLATE_AEA			**Work Order:**	M10L71AC		**Report DB ID:**	M10L71CS					
PU239/40	8.01E+00		7.3E-01	1.6E+00	6.73E-02	pCi/g	100%	6.75E+00	2.0E-01	119%	9/20/13 11:07 a	1.01	ALP44
							Rec Limits:	70	130	0.2		g	
Batch: 3260043	NI63_LSC			**Work Order:**	M10L61AC		**Report DB ID:**	M10L61CS					
Ni-63	2.67E+02		9.7E+00	1.3E+02	6.76E+00	pCi/g	88%	3.05E+02	5.1E+00	88%	9/21/13 05:46 a	0.5	LSC8
							Rec Limits:	70	130	-0.1		g	
Batch: 3260042	906.0_H3_LSC			**Work Order:**	M10L51AC		**Report DB ID:**	M10L51CS					
H-3	5.04E-01		7.2E-02	7.9E-02	1.21E-01	pCi/g	100%	6.53E-01	2.0E-02	77%	9/21/13 12:17 a	49.4	LSC4
							Rec Limits:	70	130	-0.2		g	
Batch: 3260039	GAMMA_GS			**Work Order:**	M10L21AC		**Report DB ID:**	M10L21CS					
CS-137	1.01E+00		1.3E-01	1.3E-01	2.54E-02	pCi/g		1.02E+00	1.1E-02	98%	9/20/13 04:29 p	350.1	GER18$1
							Rec Limits:	70	130	0.0		g	
RA-226	9.04E-01		1.3E-01	1.3E-01	3.63E-02	pCi/g		1.14E+00	1.2E-02	79%	9/20/13 04:29 p	350.1	GER18$1
							Rec Limits:	70	130	-0.2		g	
RA-228	6.50E-01		1.4E-01	1.4E-01	7.11E-02	pCi/g		6.98E-01	7.2E-03	93%	9/20/13 04:29 p	350.1	GER18$1
							Rec Limits:	70	130	-0.1		g	

TestAmerica Inc **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.2.24 A2002

FORM II

LCS RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc

SDG: JP0635

Matrix: SOIL

Report No. : 57076

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
U-238	9.64E-01		1.2E-01	1.2E-01	3.92E-02	pCi/g		1.20E+00	1.2E-02	80%	9/20/13 04:29 p	350.1	GER18$1
							Rec Limits:	70	130	-0.2		g	
Batch: 3260040	SRTOT_SEP_PRECIP_GPC			**Work Order:**	M10L31AC		**Report DB ID:**	M10L31CS					
STRONTIUM	7.17E+00		6.7E-01	2.9E+00	5.59E-01	pCi/g	85%	6.30E+00	1.3E-01	114%	9/23/13 07:58 a	1.1	GPC31A
							Rec Limits:	70	130	0.1		g	

No. of Results: 10 **Comments:**

TestAmerica Inc **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.2.24 A2002

FORM II

MATRIX SPIKE RESULTS

Date: 24-Sep-13

Lab Name: TestAmerica Inc **SDG:** JP0635

Lot-Sample No.: J3I170408-1, J1RR31 **Report No. :** 57076 **Matrix:** SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 3260077	**Work Order:**	M10LN1AQ		**Report DB ID:**	M10LN1CW		**Orig Sa DB ID:**	9M10LN10				
HEXCHROME	2.63E+01			0.0E+00	1.55E-01	mg/kg	N/A	90.48%	2.91E+01	9/23/13 10:05 a	2.5057	7196_CR6
	1.59E-01										g	

Number of Results: 1

Comments:

TestAmerica Inc
rptSTLRchMs
V5.2.24 A2002

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/23/2013 4:29:43 PM

Lot No., Due Date: J3I170408; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260044; RPUISO Pulso by ALP
SDG, Matrix: JP0635; SOIL

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes ✓ No N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes ✓ No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes ✓ No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes ✓ No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes ✓ No N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes ✓ No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes ✓ No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A ✓

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No ✓ N/A

3.5 Are the sample yields and MDAs within contract limits? Yes ✓ No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes ✓ No N/A

4.2 Were analysis volumes entered correctly? Yes ✓ No N/A

4.3 Were Yields entered correctly? Yes No N/A ✓

4.4 Were spectra reviewed/meet contractual requirements? Yes ✓ No N/A

4.5 Were raw counts reviewed for anomalies? Yes ✓ No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes ✓ No N/A

5.2 Are all required forms filled out? Yes ✓ No N/A

5.3 Was the correct methodology used? Yes ✓ No N/A

5.4 Was transcription checked? Yes ✓ No N/A

5.5 Were all calculations checked at a minimum frequency? Yes No N/A ✓

5.6 Are worksheet entries complete and correct? Yes ✓ No N/A

6.0 Comments on any No response:
NCM 10-24738

First Level Lisa Gustafson **Date** 9/23/13

TestAmerica Richland
QAS_RADCALCv4.8.44

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260044

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓	✓	
C. Other 1. Are all Non-conformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: CRDL = 1.0 pCi/g
See Nonc #: 10-~~21788~~ 24738
RW 9/24/13

Second Level Review: [signature] Date: 9/24/13

LS-038B, Rev. 10, 9/07

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-24738**
NCM Initiated By: Lisa Antonson
Date Opened: 09/23/2013
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Counting
Tests: Pulso by ALP
Lot #'s (Sample #'s): J3I170000 (44), J3I170408 (1),
QC Batches: 3260044,

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	09/23/2013	The tracer for sample M10LN (dup) was recovered high in the original count. A recount brought it within limits.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	09/23/2013	The sample was recounted.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 9/23/2013

Page 1 of 1

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/23/2013 2:44:41 PM

Lot No., Due Date: J3I170408; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260040; RSRTOT SrTot by GPC
SDG, Matrix: JP0635; SOIL

	Yes	No	N/A
1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?	✓		
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?	✓		
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?			✓
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

First Level [signature] Date 9/23/13

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260040

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: CRDL = 1.0 pCi/g

Second Level Review: [signature] Date: 9/24/13

LS-038B, Rev. 10, 9/07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/24/2013 8:38:23 AM

Lot No., Due Date: J3I170408; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260039; RGAMMA Gamma by GER
SDG, Matrix: JP0635; SOIL

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A ✓

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes	No ✓	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓	No	N/A

4.0 Raw Data

4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes	No	N/A ✓
4.4 Were spectra reviewed/meet contractual requirements?	Yes ✓	No	N/A
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A

5.0 Other

5.1 Are all nonconformances included and noted?	Yes ✓	No	N/A
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes	No	N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:
NCM 10-24747

First Level Lisa Antonsen **Date** 9/24/13

TestAmerica Richland
QAS_RADCALCv4.8.44

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260039

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓	✓	
C. Other 1. Are all Non-conformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: CRDL = 0.1 pCi/gr
See NCM #: 10-24747

Second Level Review: [signature] Date: 9/24/13

LS-038B, Rev. 10, 9/07

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-24747**
NCM Initiated By: Lisa Antonson
Date Opened: 09/24/2013
Date Closed:

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Counting
Tests: Gamma by GER
Lot #'s (Sample #'s): J3I170000 (39), J3I170408 (1),
QC Batches: 3260039,

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	09/24/2013	MDA exceeds CRDL for Eu-154 in sample M10LN (dup).

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	09/24/2013	None

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
	Response	Response Note			

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

Date Printed: 9/24/2013

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/23/2013 9:24:45 AM

Lot No., Due Date: J3I170408; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260042; RTRITIUM H-3 by LSC
SDG, Matrix: JP0635; SOIL

1.0 COC	
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓ No N/A
2.0 QC Batch	
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓ No N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓ No N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓ No N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes No N/A ✓
3.0 QC & Samples	
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓ No N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓ No N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes No N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes ✓ No N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓ No N/A
4.0 Raw Data	
4.1 Were results calculated in the correct units?	Yes ✓ No N/A
4.2 Were analysis volumes entered correctly?	Yes ✓ No N/A
4.3 Were Yields entered correctly?	Yes No N/A ✓
4.4 Were spectra reviewed/meet contractual requirements?	Yes No N/A ✓
4.5 Were raw counts reviewed for anomalies?	Yes ✓ No N/A
5.0 Other	
5.1 Are all nonconformances included and noted?	Yes No N/A ✓
5.2 Are all required forms filled out?	Yes ✓ No N/A
5.3 Was the correct methodology used?	Yes ✓ No N/A
5.4 Was transcription checked?	Yes ✓ No N/A
5.5 Were all calculations checked at a minimum frequency?	Yes No N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓ No N/A
6.0 Comments on any No response:	

First Level Thomas O'Neil **Date** 9/23/13

TestAmerica Richland
QAS_RADCALCv4.8.44

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 32600042

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: CRDL = 400pCi/g

Second Level Review: [signature] Date: 9/23/13

LS-038B, Rev. 10, 9/07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/20/2013 7:45:12 AM

Lot No., Due Date: J3I170408; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260041; RC14LSCC C-14 Digestion
SDG, Matrix: JP0635; SOIL

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes	No	N/A ✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes ✓	No	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓	No	N/A
4.0 Raw Data			
4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes	No	N/A ✓
4.4 Were spectra reviewed/meet contractual requirements?	Yes	No	N/A ✓
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A
5.0 Other			
5.1 Are all nonconformances included and noted?	Yes	No	N/A ✓
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes	No	N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A

6.0 Comments on any No response:

First Level [signature] **Date** 9/20/13

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260041

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: CRQL = 50 pCi/g

Second Level Review: Rhonda Wfau Date: 9/20/13

LS-038B, Rev. 10, 9/07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

9/24/2013 7:33:52 AM

Lot No., Due Date: J3I170408; 09/24/2013
Client, Site: 127642; S00X235B00 HANFORD
QC Batch No., Method Test: 3260043; RNI63 Ni-63 by LSC
SDG, Matrix: JP0635; SOIL

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓	No	N/A
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓	No	N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓	No	N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓	No	N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes ✓	No	N/A
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓	No	N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes	No	N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes ✓	No	N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓	No	N/A
4.0 Raw Data			
4.1 Were results calculated in the correct units?	Yes ✓	No	N/A
4.2 Were analysis volumes entered correctly?	Yes ✓	No	N/A
4.3 Were Yields entered correctly?	Yes ✓	No	N/A
4.4 Were spectra reviewed/meet contractual requirements?	Yes	No	N/A ✓
4.5 Were raw counts reviewed for anomalies?	Yes ✓	No	N/A
5.0 Other			
5.1 Are all nonconformances included and noted?	Yes	No	N/A ✓
5.2 Are all required forms filled out?	Yes ✓	No	N/A
5.3 Was the correct methodology used?	Yes ✓	No	N/A
5.4 Was transcription checked?	Yes ✓	No	N/A
5.5 Were all calculations checked at a minimum frequency?	Yes	No	N/A ✓
5.6 Are worksheet entries complete and correct?	Yes ✓	No	N/A
6.0 Comments on any No response:			

Thomas O'Neil

First Level _____ **Date** 9/24/13

TestAmerica Richland
QAS_RADCALCv4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist

RADIOCHEMISTRY

Second Level Review

Batch Number: 3260043

Review Item	Yes (√)	No (√)	NA (√)
A. Sample Analysis 1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples 1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other 1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: SRDL= 30pCi/g

Second Level Review: [signature] Date: 9/24/13

LS-038B, Rev. 10, 9/07

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s):	3260077	Lab Sample Numbers or SDG:	JP0635

Method/Test/Parameter: Cr+6 ☐ RL-WC-003(Aqueous) ☒ RL-WC-004(Solid)

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Initial Calibration 1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient greater than 0.97?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✓
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration 1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis 1. Were any samples with concentrations above the linear range diluted and reanalyzed?			✓	✓
2. Were all sample holding times met?	✓			✓
D. QC Samples 1. All results for the preparation blank below limits?	✓			✓
2. LCS percent recovery within 85-115%	✓			✓
3. $PbCrO_4$ percent recovery within 75-125%?	✓			✓
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?	✓			✓
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			✓
6. On MS failure, PDMS within 85-115%?			✓	✓
E. Other 1. Are all nonconformances included and noted?			✓	✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response or list NCM number:

Analyst H. Rahavi Date 9/23/13 2nd Review [illegible] Date 9/23/13

CG-231 Rev 1, 5/12

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-238-004

Collector: WHITE, EC	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 8C	Data Turnaround: 7day ~~15 Days~~ DWS 9/12/13		
Project Designation: 100K Shoreline Characterization	Sampling Location: 100-K-111 - 100-K-111 West Focused Samples		SAF No.: RC-238
Ice Chest No.: NA	Field Logbook No.: EL-1668	COA: 0ESKSH6520	Method of Shipment: Local Delivery
Shipped To: TestAmerica - Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

All Test America Cr-VI analyses must be preformed at the Richland facility

COOL 4C 9-12-13 CMB

Preservation	Cool 4C	None	None	None							
Type of Container	G/P	G/P	G/P	G/P							
No. of Container(s)	1	1	1	1							
Volume	250mL	500mL	250mL	250mL							
SAMPLE ANALYSIS	Chromium Hex - 7196 {Hexavalent Chromium}	See item (2) in Special Instructions	Isotopic Plutonium; Nickel-63; Strontium-89,90 -- Total Sr	Carbon-14; Tritium - H3	RCF						

Sample No.	Matrix	Sample Date	Sample Time										
J1RR31	SOIL	9/12/13	0907	✓	✓	✓	✓	36138	M10	LN			
	SOIL												
	SOIL												
	SOIL												
	SOIL												

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
E. White	9-12-13 0937	DWSka DWSkeA	0937 9/12/13
DWSkeA DWSkeA	9/12/13 1419	Cindra Bingham	9-12-13 1419
Cindra Bingham	9-12-13 1425	1060 Battelle, fridge IA	9-12-13 1425
1060 Battelle, fridge IA	9-17-13 0825	Cindra Bingham	9-17-13 0825
Cindra Bingham WCH	9-17-13 0925	J. Beck TALK	9-17-13 0925

Sign/Print Names

FINAL SAMPLE DISPOSITION: Disposal Method | Disposed By | Date/Time

SPECIAL INSTRUCTIONS

All Test America Cr-VI saalyses must be preformed at the Richland facility.
The 500 ml GEA samples will be sent to RCF for shipping screen then fowarded on to the rad lab.

(2) Gamma Spec (Client List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

J31170408
JP0635
Due 9-24-13

J31170408

JP0635

REVIEWED BY K. Woodvia email DATE 9-17-13

WCH-EE-011

Generated Date/Time: 06/26/2013 16:08, PDT

DWS 9/12/13

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-238-004

Page 1 of ~~1~~ 2

Collector: WHITE, EC	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Project Designation: 100K Shoreline Characterization	Sampling Location: 100-K-111 - 100-K-111 West Focused Samples		SAF No.: RC-238
Ice Chest No.: NA	Field Logbook No.: EL-1668	COA: 0ESKSH6520	Method of Shipment: Local Delivery
Shipped To: Radiological Counting Facility TO: /TAIR	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

Price Code: 8C

Data Turnaround: 24 hrs ~~15 Days~~ DWS 9/12/13

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

All Test America Cr-VI analyses must be preformed at the Richland facility

Preservation	None											
Type of Container	G/P											
No. of Container(s)	1											
Volume	500ml ~~800~~ DWS 9/12/13											
SAMPLE ANALYSIS	RCF GEA Shipping Screen					RCF						
Sample No. / Matrix / Sample Date / Sample Time												
J1RR31 / SOIL / 9/12/13 / 0907	✓		339gr			36138						
SOIL												
SOIL												
SOIL												
SOIL												

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: E. White / Date/Time: 9-12-13 0937	Received By/Stored In: DWShea DWSHEA / Date/Time: 9/12/13 0937
Relinquished By/Removed From: DWShea DWSHEA / Date/Time: 9/12/13 1419	Received By/Stored In: Cinda Bingham / Date/Time: 9-12-13 1419
Relinquished By/Removed From: Cinda Bingham / Date/Time: 9-12-13 1450	Received By/Stored In: KWMcGregor / Date/Time: 9-12-13 1450 RCF
Relinquished By/Removed From: D.Miller RCF / Date/Time: 9-16-13 1315	Received By/Stored In: Cinda Bingham / Date/Time: 9-16-13 1315
Relinquished By/Removed From: Cinda Bingham / Date/Time: 9-16-13 1400	Received By/Stored In: 1060 Battelle, Fridge 1A / Date/Time: 9-16-13 1400
Relinquished By/Removed From: 1060 Battelle, fridge 1A / Date/Time: 9-17-13 0825	Received By/Stored In: Cinda Bingham / Date/Time: 9-17-13 0825
Relinquished By/Removed From: Cinda Bingham / Date/Time: 9-17-13 0925	Received By/Stored In: J Bock TALL 9-17-13 0935
FINAL SAMPLE DISPOSITION: Disposal Method	Disposed By / Date/Time

SPECIAL INSTRUCTIONS

All Test America Cr-VI saalyses must be preformed at the Richland facility.
The 500 ml GEA samples will be sent to RCF for shipping screen then fowarded on to the rad lab.

*tranship to TAIR on pg. 1 for gamma Spec.
9-12-13 CMB

J3I170408
JP0635
Due 9-24-13

J3I170408

REVIEWED BY K. Wood
DATE 9-17-13

WCH-EE-011

Generated Date/Time: 06/26/2013 16:08, PDT

Analysis Report for RCF36138

J1RR31 SAF:238 100K/100-K-111 West 500 ml amber glass

"Qualitative Only"

GAMMA SPECTRUM ANALYSIS

Sample Identification	: RCF36138
Sample Description	: J1RR31 SAF:238 100K/100-K-111 West 500 ml amber glass
Sample Type	: Non Standard Geometry
Sample Size	: 3.390E+02 grams
Facility	: Default
Sample Taken On	: 9/12/2013 9:07:00PM
Acquisition Started	: 9/12/2013 3:09:34PM
Procedure	: Non Standard Geometry
Operator	: eswallac
Detector Name	: NEWBEGE
Geometry	: 50 ml Pill Box
Live Time	: 3600.0 seconds
Real Time	: 3600.8 seconds
Dead Time	: 0.02 %
Peak Locate Threshold	: 3.00
Peak Locate Range (in channels)	: 40 - 4096
Peak Area Range (in channels)	: 40 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 6/24/2013
Efficiency Calibration Used Done On	: 2/22/2013
Efficiency Calibration Description	: NBEGE 50ml PB EC022213 SN92492
Sample Number	: 34769

INTERFERENCE CORRECTED REPORT

Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40		1.000	6.65E+00	6.30E-01	
PB-212		0.709	2.88E-01	2.95E-02	
RA-226d	@	0.940	2.62E-01	2.48E-02	
TH-232d		0.998	3.12E-01	2.39E-02	

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 9-17-13 / 0925 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 20 cpm Initials [B]

Client: WCH SDG #: JP0635 SAF #: RC-238 NA [ ]

Lot Number: 33I170408

Chain of Custody # RC-238-004

Shipping Container ID or Air Bill Number : hand delivered NA [✓]

Samples received inside shipping container/cooler/box Yes [B] Continue with 1 through 4. Initial appropriate response.
No [ ] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes [ ] No [ ] No Custody Seal [B]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [B]
3. Cooler temperature: 8.7 °C On Ice NA [ ]
4. Vermiculite/packing materials is NA [B] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [B] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1 x 500 mL AG; 3 x 250 mL AG
8. Sample holding times exceeded? NA [ ] Yes [ ] No [B]
9. Samples have: ____tape ____hazard labels [B] custody seals [B] appropriate sample labels
10. Matrix: [B] A (FLT, Wipe, Solid, Soil) ____I (Water) ____S (Air, Niosh 7400) ____T (Biological, Ni-63)
11. Samples:
    [B] are in good condition ____are leaking ____are broken
    ____have air bubbles (Only for samples requiring no head space) ____Other ____
12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [B]
    (If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO_3 added and pH after addition on table)
13. Were any anomalies identified in sample receipt? Yes [ ] No [B]
14. Description of anomalies (include sample numbers): NA [B] ____
15. Sample Location, Sample Collector Listed on COC? * Yes [B] No [ ]
    *For documentation only. No corrective action needed.
16. Additional Information: w/A

[ ] Client/Courier denied temperature check. [ ] Client/Courier unpack cooler.

Sample Check-in List completed by Sample Custodian:
Signature: [signature] Date: 9-17-13

Client Notification needed? Yes [ ] No [✓] Date: ____
By: ____
Person contacted: ____

[✓] No action necessary; process as is

Project Manager [signature] Date 9/17/13

LS-023 Rev. 17, 05/13

Page 1 of 1

9/18/2013 1:09:15 AM

Sample Preparation/Analysis

Balance Id:1120373922

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

6A Pu Prp PRP003/PRP005, Sep ALP002/ALP015
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

AnalyDueDate: 09/24/2013 VP0635

Sep1 DT/Tm Tech:

Batch: 3260044 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AE J3I170408-1-SAMP 09/12/2013 09:07			1.06g,in AmtRec: 1X500MLAG;3X250MLAG	1.06g #Containers: 4	PUTC13785 09/10/13,pd 01/01/10,r				100 Scr:	41 Alpha:	1156	9/20/13 9/15 Beta:	
2 M10LN-1-AP-X J3I170408-1-DUP 09/12/2013 09:07			1.00g,in AmtRec: 1X500MLAG;3X250MLAG	1.00g #Containers: 4	PUTC13786 09/10/13,pd 01/01/10,r				Scr:	42 Alpha:	1157	Beta:	
3 M10L7-1-AA-B J3I170000-44-BLK 09/17/2013 11:29 pd			1.04g,in AmtRec:	1.04g #Containers: 1	PUTC13787 09/10/13,pd 01/01/10,r				Scr:	43 Alpha:	1157	Beta:	
4 M10L7-1-AC-C J3I170000-44-LCS 09/17/2013 11:29 pd			1.01g,in AmtRec:	1.01g #Containers: 1	PUSK1049 09/10/13,pd 01/01/10,r				Scr:	44 Alpha:	1157	Beta:	

TestAmerica Richland Wa.

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1
pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis

WO Cnt: 4
Prep_SamplePrep v4.8.65

9/18/2013 1:09:16 AM

Sample Preparation/Analysis

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922
Pipet #: _____
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,WoodT

AnalyDueDate: 09/24/2013

Batch: 3260044 pCi/g
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M10LN1AE-SAMP Constituent List:

M10L71AA-BLK:

M10L71AC-LCS:

M10LN1AE-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L71AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L71AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

RE COUNT 2 9-23-13

*** ~~RE-ANALYSIS~~ REQUEST ***

DUE DATE 9/24/13

CUSTOMER UCH

ANALYSIS Pu

MATRIX Soil

LOT NUMBER J3117L68

SAMPLE DELIVERY GROUP

OLD BATCH NUMBER 3216020044

NEW BATCH NUMBER

LAB SAMPLE ID	CLIENT ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1) M10LN1AP		120% tracer.
2)		
3)		
4)		
5)		
6)		
7)		
8)		
9)		
10)		
11)		
12)		
13)		
14)		
15)		
16)		
17)		
18)		
19)		
20)		
LAB QC ID		Assigned with new batch.

RC-048 Rev 9, 9/10

9/23/2013 8:27:44 AM

Sample Preparation/Analysis

Balance Id:1120373922

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260044 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 3260039 AXTA, 3260040 CHTH, 3260041 5STC, 3260042 ATS6, 3260043 AFS4, 3260044 6ASO, 3260077
DWEA,

Prep Tech: BourneD,WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AE J3I170408-1-SAMP 09/12/2013 09:07			1.06g,in	1.06g	PUTC13785 09/10/13,pd 01/01/10,r								
			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
2 M10LN-1-AP-X J3I170408-1-DUP 09/12/2013 09:07			1.00g,in	1.00g	PUTC13786 09/10/13,pd 01/01/10,r								
			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
~~3 M10LN-2-AP-X~~ J3I170408-1-DUP 09/12/2013 09:07			1.00g	1.00g	PUTC 13786			100		41	1149	9/23/13	
			AmtRec: 1X500MLAG;3X250MLAG		#Containers: 4				Scr:		Alpha:		Beta:
4 M10L7-1-AA-B J3I170000-44-BLK 09/17/2013 11:29 pd			1.04g,in	1.04g	PUTC13787 09/10/13,pd 01/01/10,r								
			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:
5 M10L7-1-AC-C J3I170000-44-LCS 09/17/2013 11:29 pd			1.01g,in	1.01g	PUSK1049 09/10/13,pd 01/01/10,r								
			AmtRec:		#Containers: 1				Scr:		Alpha:		Beta:

Comments: M10L7-BLK CommentsP-13-00319,S-13-00227,,,S-13-00090,S-13-00009,P-13-00453,P-13-00459,P-13-00399,S-13-202,S-13-205,S-13-00122

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M10LN1AE-SAMP Constituent List:

9/23/2013 8:27:44 AM

Sample Preparation/Analysis

6A Pu Prp PRP003/PRP005, Sep ALP002(ALP015)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260044 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: BourneD,WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

```
  PU-238      RDL:1          pCi/g     LCL:       UCL:       RPD:       PU-239     RDL:1      pCi/g     LCL:70     UCL:130    RPD:35
  Pu-242      RDL:           pCi/g     LCL:20     UCL:105    RPD:35
M10L71AA-BLK:
  PU-238      RDL:1          pCi/g     LCL:       UCL:       RPD:       PU-239     RDL:1      pCi/g     LCL:       UCL:       RPD:
  Pu-242      RDL:           pCi/g     LCL:20     UCL:105    RPD:35
M10L71AC-LCS:
  PU-239      RDL:1          pCi/g     LCL:70     UCL:130    RPD:35     Pu-242     RDL:       pCi/g     LCL:20     UCL:105    RPD:35

M10LN1AE-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L71AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L71AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

9/23/2013 4:28:37 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/23/2012, 9/28/2013, Batch: '3260044', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting				Comments
3260044							
AC		**Rev1C**	**WoodT**	9/18/2013 12:35:36			
SC			mcginnist	IsBatched	9/17/2013 12:06:09 PM		ICOC_RADCALC v4.8.49
SC			WoodT	InPrep	9/18/2013 12:35:36 AM		RL-PRP-003 REVISION 3
SC			WoodT	Prep1C	9/18/2013 1:09:30 AM		RL-PRP-003 REVISION 3
SC			BourneD	Sep2C	9/19/2013 11:32:23 AM		RL-ALP-001 REVISION 4
SC			RichardsonB	Sep2C	9/20/2013 6:59:48 AM		RL-ALP-016 REVISION 3
SC			BullJ	InCnt1	9/20/2013 9:18:46 AM		RL-CI-008 REVISION 3
SC			NortonJ	CalcC	9/20/2013 1:34:51 PM		RL-CI-008 REVISION 3
SC			NortonJ	InCnt1	9/23/2013 3:57:12 PM		RL-CI-008 REVISION 3
SC			antonsonl	Rev1C	9/23/2013 4:28:20 PM		RL-DR-001 Rev 4
AC			**WoodT**	9/18/2013 1:09:30			
AC			**BourneD**	9/19/2013 11:32:23			
AC			**RichardsonB**	9/20/2013 6:59:48			
AC			**BullJ**	9/20/2013 9:18:46			
AC			**NortonJ**	9/20/2013 1:34:51 PM			
AC			**NortonJ**	9/23/2013 3:57:12 PM			
AC			**antonsonl**	9/23/2013 4:28:20 PM			

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 8

ICOCFractions v4.8.44

9/20/2013 3:25:19 PM

Sample Preparation/Analysis

Balance Id:1120482733

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

CH Sr-Total Prp PRP003, Sep GPC003
TH Total Strontium by GPC
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech: 09/20/2013 11:55,JorgensonD

Batch: 3260040 **SOIL** **pCi/g** **PM, Quote: RW2, 27038**

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 3260039 AXTA, 3260040 CHTH, 3260041 5STC, 3260042 ATS6, 3260043 AFS4, 3260044 6ASO, 3260077 DWEA,

Prep Tech: BourneD,SannohS

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AC J3I170408-1-SAMP 09/12/2013 09:07			1.00g,in AmtRec: 1X500MLAG;3X250MLAG	1.00g #Containers: 4	SRTC1461 09/05/13 09/20/2013 11:55,s1			7.8mg Scr:	50 Alpha:	31A	0730	9/23/13	Beta:
2 M10LN-1-AK-X J3I170408-1-DUP 09/12/2013 09:07			1.00g,in AmtRec: 1X500MLAG;3X250MLAG	1.00g #Containers: 4	SRTC1462 09/05/13			9.8mg Scr:	Alpha:	31B			Beta:
3 M10L3-1-AA-B J3I170000-40-BLK 09/17/2013 11:29 pd			1.20g,in AmtRec:	1.20g #Containers: 1	SRTC1463 09/05/13			10.0mg Scr:	Alpha:	31D			Beta:
4 M10L3-1-AC-C J3I170000-40-LCS 09/17/2013 11:29 pd			1.10g,in AmtRec:	1.10g #Containers: 1	STSF0331 09/05/13			10.3mg Scr:	Alpha:	31A	0823	9/23/13	Beta:

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 4 Prep_SamplePrep v4.8.65

9/20/2013 3:25:20 PM

Sample Preparation/Analysis

CH Sr-Total Prp PRP003, Sep GPC003
TH Total Strontium by GPC
5I CLIENT: HANFORD

Balance Id:1120482733

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: SannohS

AnalyDueDate: 09/24/2013

Batch: 3260040 pCi/g

SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M10L3-BLK Comments-P-13-00441,P-13-00493,P-13-00484

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M10LN1AC-SAMP Constituent List:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

M10L31AA-BLK:

Sr-90	RDL:1	pCi/g	LCL:	UCL:	RPD:

M10L31AC-LCS:

Sr-90	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35

M10LN1AC-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

M10L31AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

M10L31AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

9/23/2013 2:44:07 PM

ICOC Fraction Transfer/Status Report

ByDate: 9/23/2012, 9/28/2013, Batch: '3260040', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260040						
AC		**Rev1C**	**SannohS**	9/18/2013 8:37:07		
SC			mcginnist	IsBatched	9/17/2013 12:06:01 PM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	9/18/2013 8:37:07 AM	RL-PRP-003 REVISION 4
SC			JorgensonD	Sep2C	9/20/2013 3:28:44 PM	RL-GPC-010 REVISION 2
SC			NortonJ	InCnt1	9/20/2013 3:34:09 PM	RL-Cl-006 REVISION 3
SC			BullJ	CalcC	9/23/2013 11:09:43 AM	RL-Cl-006 REVISION 4
SC			mcginnist	Rev1C	9/23/2013 2:44:01 PM	RL-DR-001 Rev 4
AC			**JorgensonD**	9/20/2013 3:28:44 PM		
AC			**NortonJ**	9/20/2013 3:34:09 PM		
AC			**BullJ**	9/23/2013 11:09:43		
AC			**mcginnist**	9/23/2013 2:44:01 PM		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 5

ICOCFractions v4.8.44

9/18/2013 12:06:06 AM

Sample Preparation/Analysis

PRIORITY

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Balance Id:1120421763
Pipet #: _____
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,WoodT

AnalyDueDate: 09/24/2013

Batch: 3260039 **SOIL** **pCi/g** **PM, Quote: RW2, 27038**
SEQ Batch, Test: None All Tests: 3260039 AXTA, 3260040 CHTH, 3260041 5STC, 3260042 ATS6, 3260043 AFS4, 3260044 6ASO, 3260077
DWEA,

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AG J3I170408-1-SAMP 09/12/2013 09:07			321.80g,in	321.80g				S200	200	G18	1120	9/20/13 JB	
				AmtRec: 1X500MLAG;3X250MLAG						Scr:	Alpha:		Beta:
2 M10LN-1-AJ-X J3I170408-1-DUP 09/12/2013 09:07			ISV							G19	1502	9/20/13 JB	
				AmtRec: 1X500MLAG;3X250MLAG						Scr:	Alpha:		Beta:
3 M10L2-1-AA-B J3I170000-39-BLK 09/17/2013 11:29 pd			348.00g,in	348.00g	OSBK					G19	1121	9/20/13 JB	
				AmtRec:	#Containers: 1					Scr:	Alpha:		Beta:
4 M10L2-1-AC-C J3I170000-39-LCS 09/17/2013 11:29 pd			350.10g,in	350.10g	QC20009 08/04/09,pd 09/01/09,r					G18	19:49	JR 9-20-13	
				AmtRec:	#Containers: 1					Scr:	Alpha:		Beta:

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1
pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added
ISV - Insufficient Volume for Analysis
WO Cnt: 4
Prep_SamplePrep v4.8.65

9/18/2013 12:06:07 AM

Sample Preparation/Analysis

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Balance Id:1120421763

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260039 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: WoodT

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M10L2-BLK "Comments M10LN Not enough sample for a duplicate, please recount on a seperate detector. tgw 9/17/2013"

```
All Clients for Batch:
    127642, Washington Closure Hanford LLC          Bechtel Hanford, Inc.        ,  RW2, 27038
```

```
M10LN1AG-SAMP Constituent List:

M10L21AA-BLK:

M10L21AC-LCS:

M10LN1AG-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L21AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L21AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

9/24/2013 8:35:43 AM

ICOC Fraction Transfer/Status Report

ByDate: 9/24/2012, 9/29/2013, Batch: '3260039', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting				Comments
3260039							
AC		Rev1C	SannohS	9/17/2013 12:17:11			
SC			mcginnist	IsBatched	9/17/2013 12:05:58 PM		ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	9/17/2013 12:17:11 PM		RL-GAM-001 REV.002
SC			WoodT	InPrep	9/17/2013 11:54:14 PM		RL-PRP-003 Revision 3
SC			WoodT	Prep1C	9/18/2013 12:04:19 AM		RL-PRP-003 REVISION 3
SC			WoodT	InPrep2	9/18/2013 12:04:54 AM		RL-GAM-001 REVISION 3
SC			WoodT	Prep2C	9/18/2013 12:05:36 AM		RL-GAM-001 REVISION 3
SC			BullJ	InCnt1	9/18/2013 5:37:01 AM		RL-CI-007 REVISION 3
SC			NortonJ	Cnt1C	9/21/2013 6:18:17 PM		RL-CI-007 REVISION 3
SC			antonsonl	Rev1C	9/24/2013 8:35:18 AM		RL-DR-001 Rev 4
AC			**WoodT**	9/17/2013 11:54:14			
AC			**WoodT**	9/18/2013 12:04:19			
AC			**WoodT**	9/18/2013 12:04:54			
AC			**WoodT**	9/18/2013 12:05:36			
AC			**BullJ**	9/18/2013 5:37:01			
AC			**NortonJ**	9/21/2013 6:18:17 PM			
AC			**antonsonl**	9/24/2013 8:35:18			

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 8

ICOCFractions v4.8.44

*

4

9/17/2013 11:29:30 AM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

AnalyDueDate: 09/24/2013

AT H-3 Prp/Sep LSC002
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

PRIORITY

Batch: 3260042 SOIL pCi/g
SEQ Batch, Test: None

PM, Quote: RW2, 27038

Balance Id:
Pipet #: _____
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AF J3I170408-1-SAMP 09/12/2013 09:07	AmtRec: 1X500MLAG;3X250MLAG			#Containers: 4					Scr:		Alpha:		Beta:
2 M10LN-1-AM-X J3I170408-1-DUP 09/12/2013 09:07	AmtRec: 1X500MLAG;3X250MLAG			#Containers: 4					Scr:		Alpha:		Beta:
3 M10L5-1-AA-B J3I170000-42-BLK 09/17/2013 11:29 pd	AmtRec:			#Containers: 1					Scr:		Alpha:		Beta:
4 M10L5-1-AC-C J3I170000-42-LCS 09/17/2013 11:29 pd	AmtRec:			#Containers: 1					Scr:		Alpha:		Beta:
5 M10L5-1-AD-BN J3I170000-42-IBLK 09/17/2013 11:29 pd	AmtRec:			#Containers: 1					Scr:		Alpha:		Beta:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M10LN1AF-SAMP Constituent List:

TestAmerica Richland Wa. Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added Page 1 ISV - Insufficient Volume for Analysis WO Cnt: 5 ICOC v4.8.49

9/17/2013 11:29:30 AM

Sample Preparation/Analysis

AT H-3 Prp/Sep LSC002
S6 Tritium by Liquid Scint
5I CLIENT: HANFORD

Balance Id:

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

AnalyDueDate: 09/24/2013

Batch: 3260042 **pCi/g**
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

```
M10L51AA-BLK:

M10L51AC-LCS:

M10L51AD-IBLK:

M10LN1AF-SAMP Calc Info:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L51AA-BLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L51AC-LCS:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L51AD-IBLK:
     Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

9/23/2013 9:24:04 AM

ICOC Fraction Transfer/Status Report

ByDate: 9/23/2012, 9/28/2013, Batch: '3260042', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260042						
AC		**Rev1C**	**NortonP**	9/20/2013 3:33:14 PM		
SC			nortonp	IsBatched	9/20/2013 11:13:35 AM	ICOC_RADCALC v4.8.49
SC			NortonP	Sep1C	9/20/2013 3:33:14 PM	RL-LSC-002 REVISION 4
SC			NortonJ	InCnt1	9/20/2013 3:55:54 PM	RL-CI-005 REVISION 3
SC			BullJ	CalcC	9/22/2013 9:33:41 AM	RL-CI-005 REVISION 3
SC			mcginnist	Rev1C	9/23/2013 8:09:19 AM	RL-DR-001 Rev 4
AC			**NortonJ**	9/20/2013 3:55:54 PM		
AC			**BullJ**	9/22/2013 9:33:41		
AC			**mcginnist**	9/23/2013 8:09:19		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 4

ICOCFractions v4.8.44

9/18/2013 11:21:01 AM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

5S C-14 Prp/Sep LSC008
TC C-14 by LSC, Carbosorb
01 STANDARD TEST SET

Balance Id:

Pipet #: _____

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: WoodT,WindischT

AnalyDueDate: 09/24/2013

Batch: 3260041 **SOIL** **pCi/g** **PM, Quote: RW2, 27038**

SEQ Batch, Test: None All Tests: 3260039 AXTA, 3260040 CHTH, 3260041 5STC, 3260042 ATS6, 3260043 AFS4, 3260044 6ASO, 3260077 DWEA,

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AH			5.021g,in	5.021g									
J3I170408-1-SAMP													
09/12/2013 09:07			AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4					Scr:		Alpha:		Beta:
2 M10LN-1-AL-X			5.047g,in	5.047g									
J3I170408-1-DUP													
09/12/2013 09:07			AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4					Scr:		Alpha:		Beta:
3 M10L4-1-AA-B			5.052g,in	5.052g									
J3I170000-41-BLK													
09/17/2013 11:29 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:
4 M10L4-1-AC-C			5.02g,in	5.02g	CSB1343 09/18/13,pd 11/08/12,r								
J3I170000-41-LCS													
09/17/2013 11:29 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:
5 M10L4-1-AD-BN													
J3I170000-41-IBLK													
09/17/2013 11:29 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:

9/18/2013 11:21:03 AM

Sample Preparation/Analysis

5S C-14 Prp/Sep LSC008
TC C-14 by LSC, Carbosorb
01 STANDARD TEST SET

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 09/24/2013

Batch: 3260041 pCi/g
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M10LN1AH-SAMP Constituent List:
C-14 RDL:5.00E+01 pCi/g LCL: UCL: RPD:
M10L41AA-BLK:
C-14 RDL:5.00E+01 pCi/g LCL: UCL: RPD:
M10L41AC-LCS:

M10L41AD-IBLK:
C-14 RDL:5.00E+01 pCi/g LCL: UCL: RPD:

M10LN1AH-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L41AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L41AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10L41AD-IBLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

9/20/2013 7:44:40 AM

ICOC Fraction Transfer/Status Report

ByDate: 9/20/2012, 9/25/2013, Batch: '3260041', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260041						
AC		**Rev1C**	**WindischT**	9/18/2013 12:11:19		
SC			WindischT	IsBatched	9/17/2013 1:07:55 PM	ICOC_RADCALC v4.8.49
SC			WindischT	Sep1C	9/18/2013 12:11:19 PM	RL-LSC-008 REVISION 3
SC			NortonJ	InCnt1	9/18/2013 12:33:48 PM	RL-CI-005 REVISION 3
SC			BullJ	CalcC	9/19/2013 9:32:55 AM	RL-CI-005 REVISION 3
SC			mcginnist	Rev1C	9/20/2013 7:44:34 AM	RL-DR-001 Rev 4
AC			**NortonJ**	9/18/2013 12:33:48		
AC			**BullJ**	9/19/2013 9:32:55		
AC			**mcginnist**	9/20/2013 7:44:34		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 4

ICOCFractions v4.8.44

9/18/2013 8:34:12 AM

Sample Preparation/Analysis

Balance Id:1120482733

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

AF Ni-63 Prp PRP003/PRP005, Sep LSC017
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260043 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 3260039 AXTA, 3260040 CHTH, 3260041 5STC, 3260042 ATS6, 3260043 AFS4, 3260044 6ASO, 3260077 DWEA,

Prep Tech: WoodT,SannohS

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AD J3I170408-1-SAMP 09/12/2013 09:07			0.50g,in AmtRec: 1X500MLAG;3X250MLAG	0.50g #Containers: 4	NITA10467 08/27/13				20 min Scr:		Alpha:		Beta:
2 M10LN-1-AN-X J3I170408-1-DUP 09/12/2013 09:07			0.50g,in AmtRec: 1X500MLAG;3X250MLAG	0.50g #Containers: 4	NITA10468 08/27/13				Scr:		Alpha:		Beta:
3 M10L6-1-AA-B J3I170000-43-BLK 09/17/2013 11:29 pd			0.50g,in AmtRec:	0.50g #Containers: 1	NITA10469 08/27/13				Scr:		Alpha:		Beta:
4 M10L6-1-AC-C J3I170000-43-LCS 09/17/2013 11:29 pd			0.50g,in AmtRec:	0.50g #Containers: 1	NISA1975 09/18/13				Scr:		Alpha:		Beta:
5 M10L6-1-AD-BN J3I170000-43-IBLK 09/17/2013 11:29 pd			AmtRec:	#Containers: 1					Scr:		Alpha:		Beta:

9/18/2013 8:34:14 AM

Sample Preparation/Analysis

AF Ni-63 Prp PRP003/PRP005, Sep LSC017
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 09/24/2013

Batch: 3260043 **pCi/g**
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments: M10L6-BLK Comments-P-13-00441,P-13-00493,P-13-00484

```
All Clients for Batch:
   127642, Washington Closure Hanford LLC          Bechtel Hanford, Inc.        ,  RW2, 27038

M10LN1AD-SAMP Constituent List:
  Ni-63       RDL:30          pCi/g     LCL:70      UCL:130     RPD:35
M10L61AA-BLK:
  Ni-63       RDL:30          pCi/g     LCL:        UCL:        RPD:
M10L61AC-LCS:
  Ni-63       RDL:30          pCi/g     LCL:70      UCL:130     RPD:35
M10L61AD-IBLK:
  Ni-63       RDL:30          pCi/g     LCL:        UCL:        RPD:

M10LN1AD-SAMP Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L61AA-BLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L61AC-LCS:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
M10L61AD-IBLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

9/24/2013 7:33:02 AM

ICOC Fraction Transfer/Status Report

ByDate: 9/24/2012, 9/29/2013, Batch: '3260043', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
3260043						
AC		**Rev1C**	**SannohS**	9/18/2013 8:29:25		
SC			mcginnist	IsBatched	9/17/2013 12:06:06 PM	ICOC_RADCALC v4.8.49
SC			SannohS	InPrep	9/18/2013 8:29:25 AM	RL-PRP-003 REVISION 4
SC			JorgensonD	Sep2C	9/20/2013 6:17:05 PM	RL-LSC-017 REVISION 3
SC			NortonJ	InCnt1	9/23/2013 3:56:15 PM	RL-CI-005 REVISION 3
SC			mcginnist	Rev1C	9/24/2013 7:32:50 AM	RL-DR-001 Rev 4
AC			**JorgensonD**	9/20/2013 6:17:05 PM		
AC			**NortonJ**	9/23/2013 3:56:15 PM		
AC			**mcginnist**	9/24/2013 7:32:50		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 4

ICOCFractions v4.8.44

9/17/2013 5:30:10 PM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC
Bechtel Hanford, Inc.

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

Balance Id:
Pipet #:

AnalyDueDate: 09/24/2013

Sep1 DT/Tm Tech:

Batch: 3260077 SOIL mg/kg PM, Quote: RW2, 27038
SEQ Batch, Test: None

Sep2 DT/Tm Tech:
Prep Tech:

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M10LN-1-AA J3I170408-1-SAMP 09/12/2013 09:07	AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4	Scr:	Alpha:	Beta:								
2 M10LN-1-AQ-S J3I170408-1-MS 09/12/2013 09:07	AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4	Scr:	Alpha:	Beta:								
3 M10LN-1-AR-X J3I170408-1-DUP 09/12/2013 09:07	AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4	Scr:	Alpha:	Beta:								
4 M10LN-1-AT-S J3I170408-1-MS 09/12/2013 09:07	AmtRec: 1X500MLAG;3X250MLAG	#Containers: 4	Scr:	Alpha:	Beta:								
5 M10TF-1-AA-B J3I170000-77-BLK 09/17/2013 17:30 pd	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:								
6 M10TF-1-AC-C J3I170000-77-LCS 09/17/2013 17:30 pd	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:								

TestAmerica Richland Wa.
Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1
pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added
ISV - Insufficient Volume for Analysis
WO Cnt: **6**
ICOC v4.8.49

9/17/2013 5:30:10 PM

Sample Preparation/Analysis

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

Balance Id:

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

AnalyDueDate: 09/24/2013

Batch: 3260077 mg/kg
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

M10LN1AA-SAMP Constituent List:

M10LN1AQ-MS Constituent List:

M10LN1AT-MS:

M10TF1AA-BLK:

M10TF1AC-LCS:

M10LN1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LN1AQ-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10LN1AT-MS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10TF1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M10TF1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

ANALYTICAL REPORT

Job Number: 280-46768-1

SDG Number: JP0635

Job Description: SAF# RC-238

For:
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

Attention: Joan H Kessner

Approved for release.
Kae E Yoder
Project Manager II
9/25/2013 12:56 PM

Kae E Yoder, Project Manager II
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0190
kae.yoder@testamericainc.com
09/25/2013

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

Table of Contents

Cover Title Page 1
Report Narrative 3
Data Qualifiers 4
Sample Summary 5
Method Summary 6
Method / Analyst Summary 7
Sample Results 8
Sample Datasheets 9
QC Results 11
Qc Reports 12
Qc Association Summary 19
Client Chain of Custody 20
Sample Receipt Checklist 21

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-46768-1

SDG #: JP0635
SAF#: RC-238

Date SDG Closed: September 18, 2013
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1RR31	280-46768-1	6010/7471	6010B/7471A

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The sample was received on 9/18/2013 9:00 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2º C.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-192086 indicates that physical and chemical interferences are present for Copper and Nickel. Results have been flagged with an "X".

Silicon was recovered outside the control limits, biased low, in the LCS associated with batch 280-192086 and in the Matrix Spike performed on sample J1RR31 in batch 280-192086. The associated sample results have been flagged "N". Silicon is a poor performer and has a history of reacting inconsistently. Data are reported as is.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1RR31; therefore, control limits are not applicable.

No other anomalies were encountered.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Lab Section	Qualifier	Description
Metals		
	U	Analyzed for but not detected.
	B	Estimated result. Result is less than the RL, but greater than MDL
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	N	Recovery exceeds upper or lower control limits
	X	Serial dilution in the analytical batch indicates that physical and chemical interferences are present.

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-46768-1	J1RR31	Solid	09/12/2013 0907	09/18/2013 0900

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Metals	TAL DEN		SW846 3050B
Mercury (CVAA)	TAL DEN	SW846 7471A	
Preparation, Mercury	TAL DEN		SW846 7471A
ASTM D-2216	TAL DEN	ASTM D-2216	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Method	Analyst	Analyst ID
SW846 6010B	Trudell, Lynn-Anne M	LMT
SW846 7471A	Mooney, Joseph C	JM
ASTM D-2216	McKittrick, Ian B	IBM

SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Client Sample ID: **J1RR31**

Lab Sample ID: 280-46768-1
Client Matrix: Solid
% Moisture: 2.7

Date Sampled: 09/12/2013 0907
Date Received: 09/18/2013 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-192591	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-192086	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	1.10 g
Analysis Date:	09/20/2013 1109			Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6790		1.4	4.7
Antimony		0.36	U	0.36	0.56
Arsenic		3.9		0.62	0.93
Barium		51.6		0.071	0.47
Beryllium		0.17	B	0.031	0.19
Boron		1.6	B	0.92	1.9
Cadmium		0.29		0.038	0.19
Calcium		3640		13.2	46.7
Chromium		14.2		0.054	0.19
Cobalt		4.8		0.093	0.93
Copper		12.9	X	0.20	0.93
Iron		13500		3.6	4.7
Lead		17.6		0.25	0.47
Magnesium		4250		3.5	18.7
Manganese		193		0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		13.2	X	0.11	3.7
Potassium		1250		38.3	280
Selenium		0.80	U	0.80	0.93
Silicon		212	N	5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		142		55.1	112
Vanadium		25.9		0.088	1.9
Zinc		102		0.37	0.93

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-192429	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-192149	Lab File ID:	130919taa.txt
Dilution:	1.0			Initial Weight/Volume:	.50 g
Analysis Date:	09/19/2013 1652			Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0068	U	0.0068	0.021

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

General Chemistry

Client Sample ID: **J1RR31**

Lab Sample ID: 280-46768-1
Client Matrix: Solid

Date Sampled: 09/12/2013 0907
Date Received: 09/18/2013 0900

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	2.7		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-192154 Analysis Date: 09/19/2013 0806 DryWt Corrected: N

QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Method Blank - Batch: 280-192086

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-192086/1-A	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192086	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	09/20/2013 1104	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Aluminum	1.6	U	1.6	5.0
Antimony	0.38	U	0.38	0.60
Arsenic	0.66	U	0.66	1.0
Barium	0.076	U	0.076	0.50
Beryllium	0.033	U	0.033	0.20
Boron	0.98	U	0.98	2.0
Cadmium	0.041	U	0.041	0.20
Calcium	14.1	U	14.1	50.0
Chromium	0.058	U	0.058	0.20
Cobalt	0.10	U	0.10	1.0
Copper	0.22	U	0.22	1.0
Iron	3.8	U	3.8	5.0
Lead	0.27	U	0.27	0.50
Magnesium	3.7	U	3.7	20.0
Manganese	0.10	U	0.10	1.0
Molybdenum	0.26	U	0.26	2.0
Nickel	0.12	U	0.12	4.0
Potassium	41.0	U	41.0	300
Selenium	0.86	U	0.86	1.0
Silicon	5.7	U	5.7	10.0
Silver	0.16	U	0.16	0.20
Sodium	59.0	U	59.0	120
Vanadium	0.094	U	0.094	2.0
Zinc	0.40	U	0.40	1.0

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Lab Control Sample - Batch: 280-192086

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-192086/2-A	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192086	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	09/20/2013 1107	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	190.0	95	82 - 116	
Antimony	50.0	48.76	98	82 - 110	
Arsenic	100	98.33	98	85 - 110	
Barium	200	193.8	97	87 - 112	
Beryllium	5.00	4.78	96	84 - 114	
Boron	100	97.57	98	80 - 120	
Cadmium	10.0	9.96	100	87 - 110	
Calcium	5000	4819	96	82 - 114	
Chromium	20.0	19.64	98	84 - 114	
Cobalt	50.0	47.99	96	87 - 110	
Copper	25.0	24.34	97	88 - 110	
Iron	100	99.12	99	87 - 120	
Lead	50.0	48.81	98	86 - 110	
Magnesium	5000	4801	96	90 - 110	
Manganese	50.0	47.85	96	88 - 110	
Molybdenum	100	98.02	98	86 - 110	
Nickel	50.0	47.95	96	87 - 110	
Potassium	5000	4876	98	89 - 110	
Selenium	200	198.3	99	83 - 110	
Silicon	1000	94.74	9	10 - 70	N
Silver	5.00	5.08	102	87 - 114	
Sodium	5000	5022	100	90 - 112	
Vanadium	50.0	48.52	97	88 - 110	
Zinc	50.0	48.00	96	76 - 114	

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Matrix Spike - Batch: 280-192086

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-46768-1	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192086	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.09 g
Analysis Date:	09/20/2013 1116	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	6790		189	9156	1256	50 - 200	4
Antimony	0.36	U	47.2	25.36	54	20 - 200	
Arsenic	3.9		94.3	93.14	95	76 - 111	
Barium	51.6		189	243.7	102	52 - 159	
Beryllium	0.17	B	4.72	4.57	93	72 - 105	
Boron	1.6	B	94.3	87.44	91	80 - 120	
Cadmium	0.29		9.43	9.29	95	40 - 130	
Calcium	3640		4720	8882	111	43 - 165	
Chromium	14.2		18.9	34.37	107	70 - 200	
Cobalt	4.8		47.2	47.73	91	72 - 106	
Copper	12.9		23.6	35.75	97	37 - 187	
Iron	13500		94.3	14350	938	70 - 200	4
Lead	17.6		47.2	60.99	92	70 - 200	
Magnesium	4250		4720	9126	103	64 - 145	
Manganese	193		47.2	254.5	130	40 - 200	4
Molybdenum	0.24	U	94.3	87.28	93	75 - 103	
Nickel	13.2		47.2	56.48	92	61 - 126	
Potassium	1250		4720	6115	103	56 - 172	
Selenium	0.80	U	189	178.9	95	76 - 104	
Silicon	212		943	387.7	19	20 - 200	N
Silver	0.15	U	4.72	4.70	100	75 - 141	
Sodium	142		4720	4887	101	78 - 111	
Vanadium	25.9		47.2	75.54	105	50 - 169	
Zinc	102		47.2	143.0	87	70 - 200	

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Duplicate - Batch: 280-192086

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-46768-1	Analysis Batch:	280-192591	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-192086	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.02 g
Analysis Date:	09/20/2013 1114	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/19/2013 1230				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	6790		6933	2	40	
Antimony	0.36	U	0.38	NC	40	U
Arsenic	3.9		4.06	5	30	
Barium	51.6		53.49	4	30	
Beryllium	0.17	B	0.156	7	30	B
Boron	1.6	B	1.35	18	30	B
Cadmium	0.29		0.315	10	30	
Calcium	3640		3772	3	30	
Chromium	14.2		15.09	6	40	
Cobalt	4.8		4.84	2	30	
Copper	12.9		13.75	6	30	
Iron	13500		13730	2	40	
Lead	17.6		18.21	3	40	
Magnesium	4250		4327	2	30	
Manganese	193		199.4	3	40	
Molybdenum	0.24	U	0.26	NC	30	U
Nickel	13.2		13.60	3	30	
Potassium	1250		1264	1	40	
Selenium	0.80	U	0.87	NC	30	U
Silicon	212		219.9	4	40	N
Silver	0.15	U	0.16	NC	30	U
Sodium	142		148.4	4	30	
Vanadium	25.9		26.19	1	30	
Zinc	102		103.1	1	40	

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Method Blank - Batch: 280-192149

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-192149/1-A	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192149	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	09/19/2013 1648	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-192149

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-192149/2-A	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192149	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	09/19/2013 1650	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.404	97	87 - 111	

Matrix Spike - Batch: 280-192149

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-46768-1	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192149	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.67 g
Analysis Date:	09/19/2013 1657	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0068	U	0.384	0.376	98	87 - 111	

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Duplicate - Batch: 280-192149

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-46768-1	Analysis Batch:	280-192429	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-192149	Lab File ID:	130919taa.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.57 g
Analysis Date:	09/19/2013 1655	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2013 1120				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0068	U	0.0060	NC	20	U

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

Duplicate - Batch: 280-192154

Method: D-2216
Preparation: N/A

Lab Sample ID:	280-46768-1	Analysis Batch:	280-192154	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	09/19/2013 0806	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	2.7	2.7	0.2	20	

Client: Washington Closure Hanford

Job Number: 280-46768-1
Sdg Number: JP0635

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-192086					
LCS 280-192086/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-192086/1-A	Method Blank	T	Solid	3050B	
280-46768-1	J1RR31	T	Solid	3050B	
280-46768-1DU	Duplicate	T	Solid	3050B	
280-46768-1MS	Matrix Spike	T	Solid	3050B	
Prep Batch: 280-192149					
LCS 280-192149/2-A	Lab Control Sample	T	Solid	7471A	
MB 280-192149/1-A	Method Blank	T	Solid	7471A	
280-46768-1	J1RR31	T	Solid	7471A	
280-46768-1DU	Duplicate	T	Solid	7471A	
280-46768-1MS	Matrix Spike	T	Solid	7471A	
Analysis Batch:280-192429					
LCS 280-192149/2-A	Lab Control Sample	T	Solid	7471A	280-192149
MB 280-192149/1-A	Method Blank	T	Solid	7471A	280-192149
280-46768-1	J1RR31	T	Solid	7471A	280-192149
280-46768-1DU	Duplicate	T	Solid	7471A	280-192149
280-46768-1MS	Matrix Spike	T	Solid	7471A	280-192149
Analysis Batch:280-192591					
LCS 280-192086/2-A	Lab Control Sample	T	Solid	6010B	280-192086
MB 280-192086/1-A	Method Blank	T	Solid	6010B	280-192086
280-46768-1	J1RR31	T	Solid	6010B	280-192086
280-46768-1DU	Duplicate	T	Solid	6010B	280-192086
280-46768-1MS	Matrix Spike	T	Solid	6010B	280-192086

Report Basis
T = Total

General Chemistry

Analysis Batch:280-192154					
280-46768-1	J1RR31	T	Solid	D-2216	
280-46768-1DU	Duplicate	T	Solid	D-2216	

Report Basis
T = Total